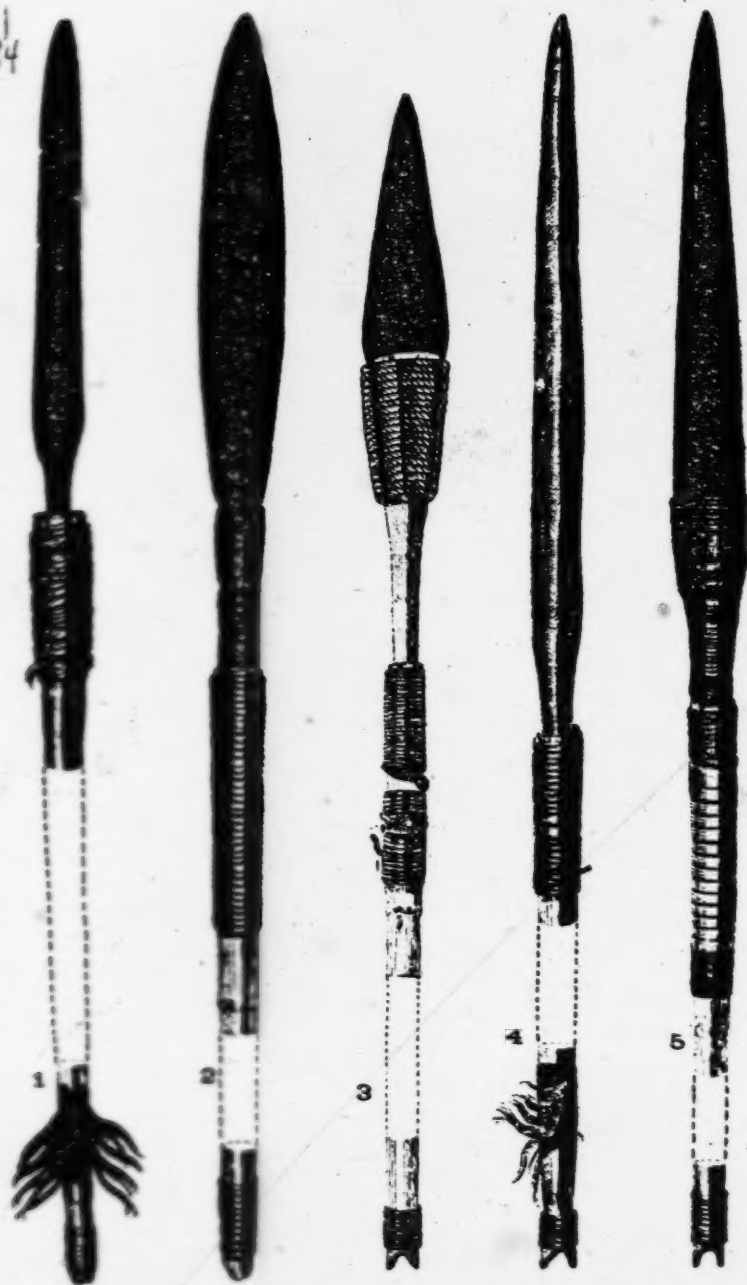


Plate VIII



Arrows for war or hunting large game (*hui iya*). Chiriguano. The tip is an iron blade, except for No. 4 which ends in a slender piece of wood. Nos. 1, 3, and 4 came from Ivu; No. 2 from Tigüipa, and No. 5 from Pipi. (1, 2, 5 are 1/2 nat. size; 3 and 4, 1/3 nat. size.)

Plate IX

● 284
411



/Caption on following page./

Plate X



Arrows with splayed ferrule for felling birds or small mammals (songo). No. 1 comes from Ivu, No. 2 from Tintapaw, No. 3 from Tiwiraití (upper Pilcomayo), and No. 4 from Caipipendí. (1/2 nat. size.)

Plate XI

411
284



Arrows with splayed ferrule for felling birds or small mammals (songo). Nos. 1 and 3 come from Ivu, Nos. 2 and 4 from Caipipendí. (1/3 nat. size.)



Fig. 14. Hunting arrow. Chiriguano. The point is formed by an iron rod to which a nail has been fastened to form a barb. This point is held in the shaft by means of a wooden peg. Prov.: Sawitrende. (1/4 nat. size.)



Fig. 15. Upper tip of a lorero (long wand with a hook at the end, with which the Chiriguano catch wild parrots they have attracted by means of tame ones). Prov.: Iva. (1/3 nat. size.)

Plate XII



Arrows with splayed ferrule for felling birds or small mammals (songo).
 Nos. 1 and 3 come from Iva. Nos. 2 and 4 from Caipipendí. (1/2 nat.)

227
[492]
[284]

252
→



Fig. 19. Wooden needle (timosa) with which the Chiriguano thread the fish they have caught in order to be able to carry them more conveniently around the waist. Prov.: Tintapaw. (1/3 nat. size.)

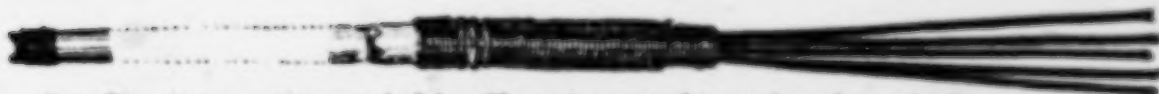


Fig. 20. Arrow used to catch fish. The points are of iron wire; formerly they were made of cactus spines. Prov.: Pípi. (1/2 nat. size.)



Fig. 21. Spear 4.70 meters long, which the Chiriguano use to harpoon large surubú when the latter swim within their reach. Prov.: Iboeytí. (1/33 nat. size.)

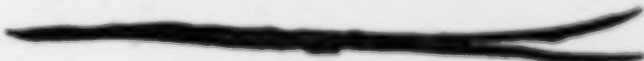


Fig. 22. Spit for roasting fish. Prov.: Iboeytí. (1/7 nat. size.)

Plate XXX

415
284



1



2

1. Calabash used as a mug. Prov.: Newirenda. (1/2 nat. size.)
2. Calabash with star-shaped lid and automatic closing. Prov.: Caruné. (1/2 nat. size.)



3



3. Flat calabash suspended by means of leather thongs. Prov.: Tairiri. (2/3 nat. size.)
4. Calabash enclosed in strips of woven bark. Prov.: Salado. (1/3 nat. size.)

419
284
191

Plate XXXI



...iron blade has the form of the T-shaped axes of ancient Peru. Prov.:
Cuzco. (1/2 nat. size.)

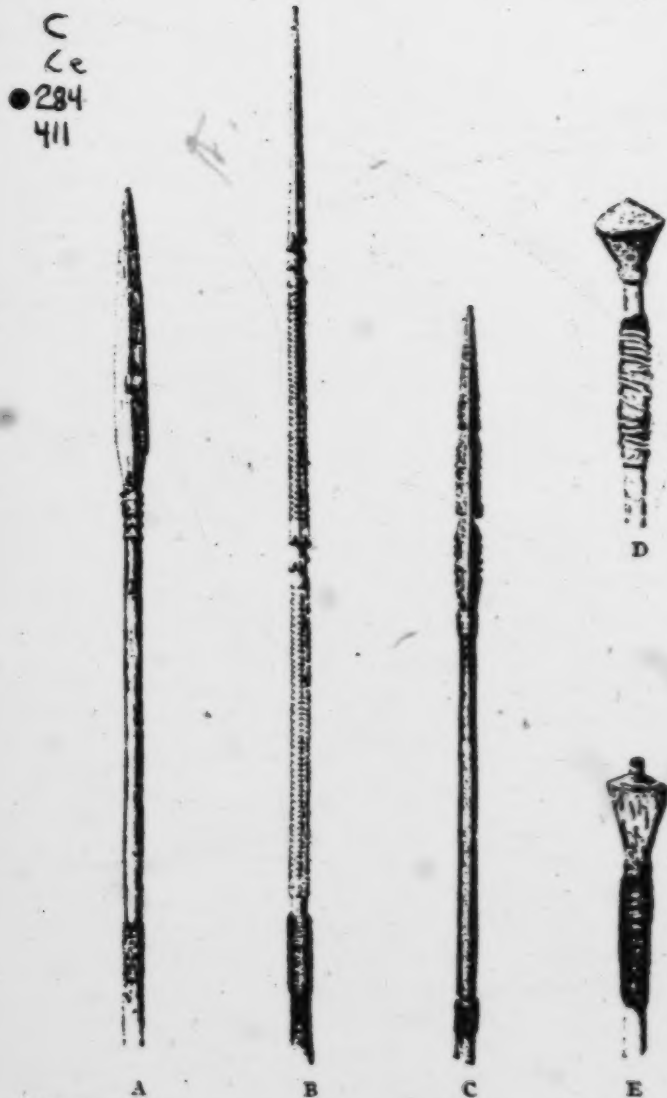


FIG. 6. Types of arrows from the Chiriguano and Chané. Shafts of reed, points of wood. $\frac{1}{4}$.

A = Chané, Rio Itiyuro. R. M. H. 61. B = Chiriguano. R. M. E. 653.

C = Chané, Rio Itiyuro. R. M. H. 36. D = Chiriguano. R. M. E. 620.

E = Chiriguano. R. M. E. 622.

XXIII.

Various kinds of handicraft besides pottery.

Knitting-technique.

C
ce
286 Respecting the occurrence of different kinds of knitting technique among the Chiriguano and Chané I have little to add beyond what was mentioned in the English edition of Part I of this work.

C
ce
286
352
171 The hammock-netting is the usual technique which gives the so-called barred hammocks (See Part I) which are widely distributed in all S. America north of El Gran Chaco. They are found almost universally where hammocks occur. Occasionally one sees among the Chiriguano and Chané bags knitted in the technique which in Part I I denoted by No 5. These bags are never made by themselves, but are obtained from the Mataco, Tapiete, or some other Chaco tribe. During my archaeological excavations at Igüembe I found a piece of pottery with impressions of knitting evidently done in this technique.

C
ce
284
286
283 The carrying-nets and most dip-nets of the Chiriguano and Chané are made with reef-knots. The Chiriguano have also dip-nets knitted with sheet-knots. For carrying-nets and dip-nets they Chiriguano and Chané generally use caraguatá bast. «Yuchan» is seldom used¹⁾

Spinning.

C
ce
283 Regarding the spinning of the Chiriguano and Chané there is little to add beyond what I mentioned in Part I.

¹⁾ *Chorisia insignis*.

411

unsuited to wooden bows, although, on the other hand, it is useful in the case of built-up bows, and bows made of horn.¹

411

284

For the purpose of fastening the string, the staves have been given neck-shaped ends, one of which often is longer than the other (fig. 205, a and b). The string, which consists of twisted rawhide, is fastened to the shorter neck end with a knot (fig. 205, a), or a loop, then wound round the other neck end, in the way seen in fig. 205, b. When not in use, the string is slackened on the bow. When the bow is to be used, the stave is stood on the ground, for purchase, when it can be bent as much as is desired, and then the slip-knot (fig. 205, b) is pulled tight. When the bow is strung taut, the slip-knot is locked, so that, when unstringing the bow, one compresses it against the ground in order to slacken the string; the slip-knot is then easily loosened, and the string lengthened as required. When the bow is not being used for shooting, this way of treating it rests the stave, and tends to preserve its elasticity. In shooting, the bow is held with the string-wound part downwards (see figs. 201 and 202).

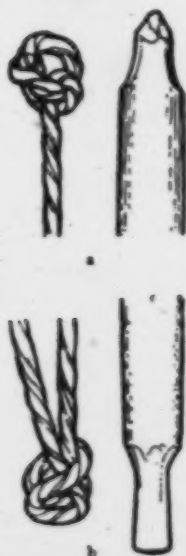


Fig. 205. String sites, and string-end loops of longbow shown in fig. 202, 2/3.

The arrows are long, sometimes as long — or even longer — than the bows. As to their size, and other particulars, this may be seen from figs. 206—214, and the table on p. 211.

In the lancet-shaped heads of arrows of the types seen in figs. 206 and 207, the tang is pushed into a wooden arrow-head socket, the forepart of which is cleft. The rear end of the socket is fitted into the hollow fore end of the reed shaft. The socket is wound with string, so that its cleft part is kept tightly pressed against the tang, which latter often is smeared with beeswax, so as to make it stick firmly in the cleft. In order to give an increased firmness to the string-lashing, this is also heavily waxed, and so is the part of the socket that is fitted in the shaft. Iron arrow-heads of this type have probably been copied from the lanceolate wooden arrow-heads that are still in use among the Chanés.²

[177]

¹ Longues and Walrond (1), pp. 48—49.

² Vide arrow-head, fig. 6 A, Nordenskiöld (17).

[P. 210]

411
284Fig. 208.
03.3.857.Fig. 209.
03.3.862.Fig. 210.
03.3.864.Fig. 211.
03.3.862.Fig. 212.
03.3.873.Fig. 213.
03.3.882.Fig. 214.
03.3.893.

Arrows with points of hard, heavy wood, and shafts of reed.
Chiriguano, San Luis, Bolivia. $\frac{3}{4}$ N. Eklund.

Arrows for fish-catching, with
two-pronged points of hard,
heavy wood, and reed shafts.
Chiriguano, San Luis, Bolivia.
 $\frac{3}{4}$ N. Eklund.

Chané SF8
Izozo

/41 cont./

C
Ce
411

points, one Izozo specimen reaches a length of 1.07 m., and a Chiriguano specimen, a length of 1 m. This is the opposite of the observations that v. Rosen made about Chiriguano arrows, that they were as large or even larger than the bows.

C
Ce
[524]C
Ce
[249]
[824]C
Ce
411
[824]

Without counting the Chiriguano arrows fitted with wire points, which no doubt are used only by children for shooting at fish or birds and which are often made with wooden shafts, arrow shafts are universally made of cane, taken from the plant Arundo donax, which, as I have already mentioned above, is cultivated by the Chané of the Parapití River. According to Nordenskiöld, the Chané formerly also used the Uba (*Cymmerium* sp.), which they call "chochio" (188). The

188. Nord. 2, p. 26.

arrows collected among the Izozo are provided with iron points. Nordenskiöld also shows in drawings Chané arrows fitted with wooden points in the form of a lancet or dentate (189).

189. Nord. 2, Fig. 6. A and C.

C
Ce
411

Among the Chiriguano arrows in the collection, there are two fitted with iron points, one fitted with a dentate wooden point, one such wooden point without a shaft, and two arrows for bird hunting that are fitted with a club instead of a point. The Chiriguano arrows fitted with iron points correspond throughout to the Izozo ones with respect to form and material. The iron point is joined to the shaft by means of a piece of split wood and a wrapping of cord made from special tree bark and fastened with wax. The lower end of the cane shaft has a groove over which the end of the arrow is also fastened by a wrapping of the same cord secured with wax.

C
Ce
[284]C
Ce
411
237C
Ce
[284]
[191]

/42/ Some Chiriguano and Izozo arrows have feathering, others do not. While the feathering was lost on some of the arrows that do not have it now, as can be discerned from the remnants of wax which had served for attaching it, other arrows show clearly that they never had feathering. If there is feathering, the feather parts attached by means of wrapping with cord and wax are small, as are those of most of the Chaco tribes.

/42 cont./

000
Ce
411
237
C
411
[284] and wax are small, as are those of most of the Chaco tribes. In the diagram made by Hermann Meyer for the various types of South American arrows, the feathering of the Chiriguano and Chané arrows corresponds to those that this writer calls "Peruanische Pechfiederung" /Peruvian pitch-feathering/. The Chiriguano arrow provided with a dentate wooden point differs from the other arrows in that its point is attached directly to the shaft without interposing a special piece of wood. Otherwise, the form of its shaft, provided in this case with feathering, corresponds to the form of the arrow shafts fitted with iron points. V. Rosen (190), v. Nordenskiöld (191), and

190. V. Rosen, op. cit., Figs. 206-214.

191. Nord. 2, Fig. 6 B.

Métraux (192) show in drawings different types of Chiriguano

192. Métraux I, Plates 8 and 9.

arrows fitted with wooden points.

Métraux often found among the Chiriguano in the Caipipendi valley arrows fitted with two dentate wooden points, which the young men used especially for shooting jacus (193).

193. Métraux I, p. 347 and Plate IX,
N. 1.

Of the two Chiriguano bird-hunting arrows fitted with a club at the upper end instead of a point (söngo), only one specimen, I. A. 534, can be considered typical. As I have already mentioned, it is the longest arrow in the collection. The other arrow for hunting birds, much shorter and badly made, doubtless was used only by boys. The form of the clubs of these two arrows (cf. Fig. 37e) is the same and also corresponds to the form of the arrows of this kind shown in

C
411 /42 cont./

drawings by v. Rosen and v. Nordenskiöld (194). This club is

C
411
● 284

194. V. Rosen, op. cit., Fig. 212. Nord. 2,
Fig. 6, D and E.

C
[239]

fastened directly on the inside of the upper part of the shaft. The shaft of the larger arrow is made of the same cane as that of the other arrows, and that of the smaller arrow is light wood. The binding on the upper part and also on the lower part of the shaft of the longer arrow consists of cotton thread secured with wax. The two arrows have feathering and have the same groove at the bottom end of the shaft. Several specimens of Chiriguano bird-hunting arrows whose clubs show different forms are shown in drawings by Métraux (195).

195. Métraux I, Plates X-XI.

C
C
411
174
[283]

The special form of the club of the arrows for shooting birds (cf. Fig. 37e) and the special method of binding the shaft with a cord of tree bark and the length which these arrows formerly had lead us to the conclusion that this type of arrow, equally common today among the Chiriguano and Chané, is the ancient form of arrow that the Chiriguano brought from their native soil to the west. I have already mentioned that the Chiriguano and Chané bows and arrows were formerly much longer. But we can also assume that these implements of the hunt and weapons of war, in accordance with their greater importance, were formerly better made than they are today.

C
C
411
524

According to Nordenskiöld, only rarely does the podoque, the bow for shooting balls, appear among the Chiriguano and Chané, and it is only used by youths and boys (196).

196. Nord. 2, p. 26.

/~3/

Macana in the Collection

411
[126] I. A. 517. (Chiriguano.) Length 64 cm. (Fig. 38).

[197] The wooden macana, acquired from the Chiriguano, is provided at its upper end with a broadening distinctly delimited from the handle (cf. Fig. 38) and in that respect corresponds to the macanas that we know from various Chaco tribes, for example, the Toba, but it does not correspond to the Chiriguano macana shown in a drawing by Nordenskiöld (197).

197. Nord. 2, Fig. 9.

The latter is about the same length, but it does not show the clear broadening at the handle, its upper end being only slightly broader. According to Nordenskiöld, the Chiriguano [224] do not use these macanas except for hunting pigs (198).

198. Nord. 1, p. 183.

[126] Slings (tamomboka) in the Collection

I. A. 508. Chiriguano. Length of the middle part of net 15 cm.

I. A. 509. " " " " " " 14 cm. (Fig. 36b.)

[286] The two slings acquired from the Chiriguano seem to be exactly alike. They consist of a middle part made with the net technique with caraguata-fiber string which terminates at each end with a cord. One of these two cords ends in a simple [284] knot and the other in a small loop. These slings are like the Chané ones shown in drawings by Nordenskiöld, while the manufacture of the middle part of the Chiriguano sling shown by Nordenskiöld is different (199). The Chiriguano in contact

199. Nord. 2, Fig. 7, A.

/73 cont./

The Technique of Making Nets

The technique of making nets is widespread among the Chiriguano and Chané and is used to make various objects, such as fishnets, hammocks, nets for carrying burdens, bags, and slings. The material used for making these nets generally consists of threads made of caraguata fibers. In the collection there are two Chiriguano burden-carrying nets made of woolen threads and another one made of strips of cowhide.

The common technique of making nets among the Chiriguano and the Chané is the technique called "Knotentechnik," in German, using the knot called the reef knot in English. Figure 138, a and b, shows such a "reef knot," and Figure 142 shows the technique of making nets with this "reef knot." According to Nordenskiöld (275), the Chiriguano and Chané use small

275. Nord. 3, p. 207.

rectangular boards for making their nets, like those with which we are familiar from many other tribes of South America. Unfortunately, I did not acquire such a board from the Chiriguano or from the Izozó. By continually wrapping the first board with a thread the simple loops which are shown in the diagram (Figure 142) in the upper row are formed. The thread, after having reached the other end of the board, are wrapped continuously in the opposite direction around a second board, being connected each time, with a knot, with the loops of the thread wrapped around the first board. If the thread has been looped in the manner described, until it gets to the first loop of the first row, the first board can be removed to serve in the formation of the third row of the meshes of the net, which is made in the same way as the second, but in the opposite direction. It is clear that nets made with this technique, in their simplest and least complicated form, must have a rectangular form, and this form is typical of all of the nets of the Chiriguano and Izozó, while various other South American tribes, for example, the Bakairí /Bacairí/, who formerly lived on the tributaries of the Xingú River (in Mato Grosso), make triangular nets.

/74 cont./

000 small mesh, but among those of the Izozo those with big mesh
 Ce are the rule. Thus the mesh of the Izozo nets used for carrying
 286 the large water jars is also very large. Most of these Izozo
 415 nets have a special band that goes over the forehead of the
 482 bearer. The structure of these bands, which are made of
 caraguata, wool, or cotton, have already been described by
 us in the chapter on weavings. Cf. Figure 133 /see p. 300/ and
 the diagram shown in Figure 125 /see p. 190/.

Ce The collection has two net bags from the Izozo which are
 286 made in such a way that the whole rectangular net is folded
 415 in the middle and the pieces which are on top of one another
 [126] are laced together with a thread on the two longitudinal sides.

Ce In the way described in the foregoing they also make the
 286 net of the fishing implement I. A. 764 described in the chapter
 227 on fishing and shown in Figure 39. Because this implement
 is used to catch small fish, the net has very small mesh. The
 Ce slings described among the hunting implements are also made
 [411] in the same way.
 [124]

/75/

C Burden-carrying Net Made by the Technique Called "Knotentechnik"
 286 in German, But Using the Knot Called "Sheet Knot" in
 415 English from the Collection
 482
 [126]

I. A. 573. Net for carrying loads (Chiriguano). Strips of
 animal hide. Length 0.85 m.

C This net is made like the nets described in the foregoing.
 [284] made of knots, but the knot used is the type called "sheet knot"
 in English and "Schotenstich" in German. This knot is shown in
 Figure 138, c and d. According to Nordenskiöld (277), the

277 Nord. 3. p. 164.

Chiriguano also have fishing nets which are made using this
 type of knot.

/75 cont./

Nets in the Collection That Are Made with Loops and
without the Use of Knots

286 415 482 [126]	I. A. 555-566.	Net for carrying loads (Chirig.).	Lgth. 0.93 m. 1.80 m.
	I. A. 567.	" " " " " "	1.15 m. (Figs. 134 and 143.)
	I. A. 568.	" " " " " "	1.20 m. (Fig. 144.)

From the Chiriguano I obtained several nets for carrying burdens, which are made without using knots, by connecting the thread in the fashion illustrated by Figures 143 and 144 and which is common among many tribes of the Chaco, as happens among the Tapieté, Matakó /Mataco/, Toba, Chorote /Choroti/, and Churupí /Chulupí/.

The great number of nets that I acquired from the Izozó are made with knots without exception, and we must therefore assume that these Indians are not familiar with or do not use the technique of making nets with simple loops and without applying knots, and that this technique, called "Schlingtechnik" in German, is used only by the Chiriguano or a part of them. Nordenskiöld does not mention this technique among the Chiriguano, and in the synoptic outline in which the several techniques of making nets are illustrated the Chiriguano are not mentioned in Column 5 among the Indian tribes which use the technique of making nets without applying knots. Of the burden-carrying nets made of caraguata thread that I acquired from the Chiriguano, ten are made without knots being applied, by the technique called "Schlingtechnik," and only seven by applying knots by the technique called "Knotentechnik." We can therefore assume that this part of the Chiriguano at least uses the technique of making nets without applying knots, although this opinion is contrary to that of Nordenskiöld, who says (278) that

278. Nord. 2, p. 116.

all of the nets made by this technique found among the Chiriguano and the Chané were acquired from the Chaco Indians.